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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,634	07/23/2001	James A. McCall	42390P11994	3565

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EXAMINER

ABRAHAM, ESAW T

ART UNIT PAPER NUMBER

2133

DATE MAILED: 04/08/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/911,634

Applicant(s)

MCCALL ET AL.

Examiner

Esaw T Abraham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14 is/are allowed.
- 6) ☒ Claim(s) 15-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4-8.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-22 are presented for examination.
2. Claims 15-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included and excluded by the claim language with the use of the phrase "may be" (in claim 15) is unclear or vague. Cancellation of said phrase in the claim will overcome the rejection.

Claims 16-22, which are directly or indirectly dependents of claim 15 are also rejected.

Allowable subject matter

Overcome 112

- b) Claims 15-22 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Claims 16-22, which are directly or indirectly dependents of claim 1 would be also allowable.

Examiner's statement for reason for allowance

The following is an examiner's statement for allowance:

3. Claims 1-14 and have been allowed.

As per claim 1, the prior art, Perino et al. (U.S. PN: 6,067,594) of record in figure 1 teach one form of module technology, using buses having three groups of lines wherein in the first group 120, all of the lines connect to all devices on all modules 140a-c. In the second group 110, the group is partitioned into a number of subgroups, 112, 114, 116, and 118, which connect to a corresponding device in each module. In the third group 130, the lines are typically radially

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connected to the modules and all devices in a particular module connect to the dedicated lines (see col. 1, lines 44-67). Further, Perino et al. in figure 3 teach a circuit model of a tapped line and each line in a group is typically connected to a module by means of a stub (see 360) which acts as tap off of the line as shown in figures 2 and 3. However, the prior art taken singly or in combination fail to teach a system comprising: first, second, third and fourth modules; a circuit board including first, second, third, and fourth module connectors to receive the first and second modules, respectively; a first group of paths of conductors extending from the circuit board to the first module connector, to the first module, back to the first module connector, to the circuit board, to the second module connector, to the second module, back to the second module connector, to terminations, wherein the first group of paths include a first short loop through section in the first module and a second short loop through section in the second module, to each couple to stubs for corresponding first and second chips of the first and second modules; and a second group of paths of conductors extending, from the circuit board to the third module connector, to the third module, back to the third module connector, to the circuit board, to the fourth module connector, to the fourth module, back to the fourth module connector, to terminations, wherein the second group of paths include a first short loop through section in the third module and a second short loop through section in the fourth module, to each couple to stubs for corresponding first and second chips of the third and fourth modules. Consequently, claim 1 is allowed over the prior art.

Claims 2-8, which are directly or indirectly dependents of claim 1 are also allowable over the prior art of record.

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As per claim 9, the prior art, Perino et al. (U.S. PN: 6,067,594) of record in figure 1 teach one form of module technology, using buses having three groups of lines wherein in the first group 120, all of the lines connect to all devices on all modules 140a-c. In the second group 110, the group is partitioned into a number of subgroups, 112, 114, 116, and 118, which connect to a corresponding device in each module. In the third group 130, the lines are typically radially connected to the modules and all devices in a particular module connect to the dedicated lines (see col. 1, lines 44-67). Further, Perino et al. in figure 3 teach a circuit model of a tapped line and each line in a group is typically connected to a module by means of a stub (see 360) which acts as tap off of the line as shown in figures 2 and 3. However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a system comprising: first, second, third and fourth modules; a circuit board including first, second, third, and fourth module connectors to receive the first and second modules, respectively; a first group of paths of conductors extending from the circuit board to the first module connector, to the first module, back to the first module connector, to the circuit board, to the second module connector, to the second module, back to the second module connector, to terminations of the circuit board, wherein a first section of each of the first group of paths couples to stubs for corresponding first, second, third and fourth chips of the first module, and a second section of each of the first group of paths couples to stubs for corresponding first, second, third, and fourth chips of the second module; and a second group of paths of conductors extending from the circuit board to the third module connector, to the third module, back to the third module connector, to the circuit board, to the fourth module connector, to the third module, back to the fourth module connector, to terminations of the circuit board, wherein a first section of each of the second group of paths

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couples to stubs for corresponding first, second, third, and fourth chips of the third module, and a second section of each of the first group of paths couples to stubs for corresponding first, second, third, and fourth chips of the fourth module.

Claims 10-14, which are directly or indirectly dependents of claim 9 are also allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. This application is in accordance for allowance except for the following formal matters: disclosed above in paragraph 1.

Prosecution on the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire TWO MONTHS from the mailing date of this year.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PN: 6,067,594 Perino et al.

US PN: 6,463,506 McAllister et al.

US PN: 6,526,517 Miller et al.

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US PN: 5,974,576 Zhu, Ji

US PN: 6,505,305 Olarig, Sompong P.


6. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (703) 305-7743. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (703) 305-9595. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


Esaw Abraham

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ALBERT DECADY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100